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Renewal of Corrosion Protection of Coated Aluminum After Welding

Frequently it is necessary to weld or otherwise apply heat to aluminum alloys that have been previously protected with conversion coatings against atmospheric corrosion during fabrication and assembly. Comprehensive tests have disclosed that temperatures exceeding 140°F (60°C) seriously and permanently reduce the protection afforded by such coatings; tested were both welds and laboratory heat treatments of samples of 2219-T87 alloy (aluminum-copper) as thick as 1 inch; the conversion coatings, with either Iridite 14-2 or Alodine 1200, were either fresh or aged as long as 2 months.

Since a weld commonly results in temperatures as high as 140°F as far as 6 inches from the site, the damaged coating should be stripped manually from the area within at least 6 inches of the weld. Then this area should be recoated by sponge or spray with the original solution. When the strength of the recoating solution is two or three times that of the original bath, the protection afforded by the recoating equals or exceeds the original protection.

Moreover, touch-up treatment by spray, with a conventional solution, improves the protection by aged or abraded coatings. Fully completed tank assemblies should be touched-up by spray for ensurance of adequate protection.

Notes:

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